3GPP TSG SA WG4 Meeting #132 S4-251122

*19-23 May 2025, Fukuoka, Japan* (revision of S4-242257 and SP-241961)

**Source: Nokia Corporation, AT&T, InterDigital Communications, Lenovo, Samsung Electronics CO., LTD, Huawei, Ericsson LM, China Mobile, Qualcomm Incorporated**

**Title: WID on 5G Real-time Transport Protocol Configurations, Phase 2**

**Document for: Discussion**

**Agenda Item: 10.6**

3GPP™ Work Item Description

Information on Work Items can be found at <http://www.3gpp.org/Work-Items>
See also the [3GPP Working Procedures](http://www.3gpp.org/specifications-groups/working-procedures), article 39 and the TSG Working Methods in [3GPP TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm)

Title: 5G Real-time Transport Protocol Configurations, Phase 2

Acronym: 5G\_RTP\_Ph2

Unique identifier: 1060021

Potential target Release: Rel-19

# 1 Impacts

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Affects: | UICC apps | ME | AN | CN | Others (specify) |
| Yes |  | X |  | X |  |
| No | X |  | X |  | X |
| Don't know |  |  |  |  |  |

# 2 Classification of the Work Item and linked work items

## 2.1 Primary classification

### This work item is a …

|  |  |
| --- | --- |
|  | Study  |
|  | Normative – Stage 1 |
|  | Normative – Stage 2 |
| X | Normative – Stage 3 |
|  | Normative – Other\* |

## 2.2 Parent Work Item

For a brand-new topic, use “N/A” in the table below. Otherwise indicate the parent Work Item.

|  |
| --- |
| Parent Work / Study Items  |
| Acronym | Working Group | Unique ID | Title (as in 3GPP Work Plan) |
| 5G\_RTP | SA4 | 960046 | Real-Time Transport Protocol Configurations |
| FS\_5G\_RTP\_Ph2 | SA4 | 1030007 | Study of 5G Real-time Transport Protocol Configurations, Phase 2 |

### 2.3 Other related Work Items and dependencies

|  |
| --- |
| Other related Work /Study Items (if any) |
| Unique ID | Title | Nature of relationship |
| 810006 | Extended Reality (XR) in 5G | Relevant XR use cases in the conversational space |
| 820003 | Support of Immersive Teleconferencing and Telepresence for Remote Terminals | Previous work in MTSI related to 360-degree immersive communication in IMS |
| 850042 | Study on evolution of IMS multimedia telephony service | Feasibility study on AR call |
| 880011 | Study on 5G Glass-type AR/MR Devices | Feasibility study on 5G support of AR/MR devices including AR conversational services |
| 920029 | Stage 1 of Evolution of IMS Multimedia Telephony Service | Requirements to support AR telephony communication as specified in TS 22.261 |
| 940066 | Study on system architecture for next generation real time communication services | Study on system architecture enhancement for next-generation real-time communication in IMS. |
| 950014 | Immersive Real-Time Communication for WebRTC | iRTCW is expected to reference a WebRTC configuration of RTP developed in this work item |
| 960042 | IMS-based AR Conversational Services | IBACS is expected to reference an IMS configuration of RTP developed in this work item |
| 960045 | Split Rendering Media Service Enabler | The Split Rendering Media Service Enabler spec is expected to reference an IMS configuration of RTP developed in this work item |
| 950013 | Study on Smartly Tethering AR Glasses | RTP header extensions are recommended in clause 7.2 and clause 8 of TR 26.806 for supporting in-band end-to-end delay measurements.  |
| 870013 | Traffic Models and Quality Evaluation Methods for Media and XR Services in 5G Systems | Aspects related to XR Split rendering and AR Conversational may be relevant as background information. |
| 1010032 | Study on Extended Reality and Media service (XRM) Phase 2 | Cross-layer aspects related to enhancing support of RTP configurations and extensions developed in this work item for extended reality and media services in 5G.  |

# 3 Justification

Earlier work on AR and MR, such as TR 26.998 (5G Glass-type AR/MR), identified multiple aspects of normative work to support “5G/AR Real-time Communication” (clause 8.4). TR 26.998 identified normative work needed to support delivery of immersive media via RTP for IMS-based and WebRTC-based conversational services. Such normative work has not been fully exploited during Release 18 when the 5G\_RTP WI was completed at the SA4 #127 meeting. TS 26.522 includes three new RTP header extensions and a new RTCP extended report for supporting the delivery of traditional conversational media and the new XR media in the 5G System.

SA2 has studied enhanced QoS handling for XR services in the Release-19 study FS\_XRM\_ph2. SA2 identified the key issues such as enhancements for support of PDU set based QoS handling, PDU set information identification for end-to-end encrypted XRM traffic, traffic detection and QoS flow mapping for multiplexed data flows and QoS handling for dynamically changing traffic characteristics. SA2 required support from SA4 for handling some key issues related to the RTP protocol perspective. For this reason, SA4 has launched and completed a Rel. 19 study item on the topic (FS\_5G\_RTP\_Ph2). The study conclusions recommended doing normative specification for several key issues related to RTP and RTCP in order to better support real-time media transport for conversational services in the 5G system for both WebRTC and IMS. These are described in TR 26.822.

This work item focuses on optimizing the use of RTP for the transport of real-time XR media (including conversational media) and associated metadata.

NOTE 1: The introduction of QUIC is not a subject of this work item.

NOTE 2: The use of the IMS Data Channel is outside the scope of this work.

# 4 Objective

The work includes the following objectives for normative specification work on TS 26.522, TS 26.510 and TS 26.113 are in scope for RTC services based on the conclusions included in TR 26.822 of the study item FS\_5G\_RTP\_Ph2:

1. Conduct normative work towards solutions that mitigate the potential inaccuracy of PDU Set Size information.

NOTE: Coordination with RAN2 is necessary to identify the PDU set size accuracy requirements.

1. Extend the RTC provisioning feature in TS 26.510 and TS 26.113 to include PDU Set Importance values for PDUs that may be treated as lone PDUs in the UPF.
2. Develop guidelines for handling of lone PDUs at the UPF, if needed.

NOTE: Objectives 2 and 3 need coordination with SA2 on whether Protocol Description needs to be extended.

1. Establish support for PDU Set handling with AL-FEC awareness and specify any necessary (S)RTP header extension and signalling enhancements for PDU Set marking with AL-FEC awareness.
2. Specify requirements and guidelines for MDS AL-FEC coding schemes necessary for PDU Set handling with AL-FEC awareness by the 5GS.

NOTE: Objectives 4 and 5 are subject to normative progress in SA2 and RAN2

NOTE: Objectives 4 and 5 are conditioned by RAN confirmation on feasibility of using content ratio information for discarding DL PDUs during congestion for RLC AM/UM mode.

1. Conduct normative work on network awareness of retransmitted PDUs as well as core network and RAN handling of retransmitted PDUs based on the information provided by the application.

NOTE: This objective requires coordination with SA2 and RAN2.

1. Conduct normative work on multiplexed RTP streams and define guidelines in TS 26.522 for RTP senders that use multiplexing.

NOTE: This objective requires coordination with SA2.

1. Conduct normative work on burst size, time to next burst, data boosting indication and the definition of data burst.

NOTE: RAN2 has indicated that TTNB may be useful if provided in time and is reliable. SA4 needs further evaluation before proceeding with normative work.

1. Conduct normative work on guidelines for marking PDU Sets that are not defined as video frames or slices and potentially signalling PDU Set type to the 5G network.

NOTE: This objective requires coordination with SA2.

1. Coordinate work with other 3GPP working groups (RAN2 and/or SA2) and external organizations as needed.
2. Provide a minimal stage 2 update to TS 26.506 defining the features adopted from the SA2 work in the RTC system. Define procedures only if time allows within Rel-19 timeline.

# 5 Expected Output and Time scale

|  |
| --- |
| New specifications {One line per specification. Create/delete lines as needed} |
| Type  | TS/TR number | Title | For info at TSG#  | For approval at TSG# | Rapporteur |
|  |  |  |  |  |  |

|  |
| --- |
| Impacted existing TS/TR {One line per specification. Create/delete lines as needed} |
| TS/TR No. | Description of change  | Target completion plenary# | Remarks |
| TS 26.522 | Updates to the specification via change requests (Objectives 1-10) | SA#109 (September 2025) |  |
| TS 26.510 | Updates to the specification via change requests(Objectives 2, 3, 5, 6, 8) | SA#109 (September 2025) |  |
| TS 26.113 | Updates to the specification via change requests(Objectives 2, 3, 5, 6) | SA#109 (September 2025) |  |
| TS 26.506 | Stage 2 updates in alignment with SA2 | SA#109 (September 2025) |  |

# 6 Work item Rapporteur(s)

Igor Curcio, Nokia Corporation, igor.curcio@nokia.com

# 7 Work item leadership

SA4

# 8 Aspects that involve other WGs

Coordination with SA2 and RAN groups may be necessary.

# 9 Supporting Individual Members

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| --- |
| Supporting IM name |
| Nokia Corporation |
| AT&T |
| InterDigital Communications |
| Lenovo |
| Samsung Electronics CO., LTD |
| Huawei |
| Ericsson LM |
| China Mobile |
| Qualcomm Incorporated |